Papers and Originals

Self-poisoning*—Part I

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The honour of giving the Milroy Lectures is especially welcome to someone fortunate to work in Milroy's own university, and it is both pleasing and fitting to present a study carried out in his native Edinburgh. As we explore the city of to-day we can be conscious of how much there still is that he would find familiar were he now able to revisit it.

Yet the subject matter of these lectures, the problem of self-poisoning, is not one he would recognize, for in his time it scarcely existed. People poisoned themselves, of course, then as now, but of those who did, even of those who were brought to hospital, few survived. They were, like suicides everywhere, generally either lonely old people, often sick or ailing, whose going could hardly be considered grievous, or they were insane and their management therefore a simple problem. In any case they were not numerous.

The picture is different to-day. Self-poisoning has become a frequent practice. More than one in every thousand of the adult population of Edinburgh is admitted to hospital each year after such an act. The fashion has so developed over the last 20 years that to-day we regard it almost as commonplace. Yet these individual instances, summed, constitute an important medical problem. Nor is it any longer academic. It presents toxicologists, psychiatrists, and public health doctors with practical problems which must be answered. For now the great majority of those who poison themselves survive, and this fact goes far towards explaining why the practice has spread.

Poisoning used to be regarded as fatal. Instances of recovery there might have been; but still, it was clearly understood, poisons were lethal. Theriac, terra sigillata, bezoar stones, from a long line of alexipharmics, each had their vogue as an antidote, but people really knew that they were of little effect. The history books disclose not many examples of recovery. Mithridates, fearful of being poisoned by his enemies, had over the years repeatedly taken small doses to make himself immune. When he eventually tried to kill himself with poison he failed. There are still tribesmen who so season themselves against the ill-effects of eating the flesh of the prey which they poison. Yet even these are examples of poison being taken for beneficial, not for hurtful, purposes. Instances of someone taking poison deliberately to harm himself, but with the intention of surviving, are hard to find. Juliet did so, but Romeo had so little thought that she might not be dead that he killed himself in despair. He knew, as everyone knew, that if you took poison you died. Conversely, you did not poison yourself unless you wanted to die. This is not so to-day.

The growth of pharmaceutical products has brought about the change. In every century before our own, poisons and drugs were dissimilar. Poisons were substances which should not be taken at all, the province not of physicians but of wizards. Their properties verged upon the magical. They were, indeed, "unctions bought of mountebanks." By the second half of the nineteenth century science had displaced sorcery, and poisons were purchased from the chemist, not the alchemist. But they still differed from drugs. Drugs, with few exceptions, though recognized to produce undesirable actions if taken in excess, were not considered lethal agents, were not used to kill. The growth of self-poisoning has come about in the train of a rapid rise in number of highly dangerous preparations employed therapeutically, together with a great contemporaneous increase in prescribing.

The effects of this medical revolution have been to make poisons both readily available and relatively safe. The way has thus been opened for self-poisoning to flourish, since few who practise it have their minds set on dying. Facilities for self-poisoning have been placed within the reach of everyone.

Experience in Edinburgh

There are auspicious circumstances for studying the subject in Edinburgh. For many decades the Royal Infirmary has had an "incidental delirium" ward for patients who required overlapping general medical and psychiatric care. To-day three-quarters of the patients admitted to the ward are cases of self-poisoning. Its principal function has come to be as a centre for the treatment of poisoning which serves the City of Edinburgh and the surrounding region. A general medical team and a psychiatric team work alongside each other. Adult poisoning cases from the whole of the city come or are sent there. If they first arrive at another hospital it is common for them to be transferred, but the great majority of patients are brought direct to the Infirmary, where it is the practice in the out-patient or casualty department to send to the ward all patients who have taken an overdose. The casualty officer does not have to make a hurried judgment about whom to send in, nor need he exercise a disliked discretion about whether a case is "serious" enough to be admitted. Whether a patient has taken 100 amytal tablets or a dozen aspirin makes no difference. Every case of poisoning is accepted.

This study therefore embraced the full range of survivors of deliberate self-poisoning acts. Some patients were deeply unconscious and required sophisticated techniques of resuscitation to save their lives; others had scarcely been physically harmed by their experience. The case material is varied because it was complete.

We investigated one year's admissions to the unit from June 1962 onwards, the research team being responsible for the psychiatric service. Social, demographic, and clinical data were

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obtained about every patient while he was still in hospital, excepting only the handful who died without recovering consciousness. It is most important that the situation is assessed by inquiry, both of the patient and of an independent informant, at the time of crisis and before the family enters, as it readily does once the immediate danger is over, into a collusion to present an identical, idealized, and false picture. This is what commonly happens if the patient is not seen by a psychiatrist until some days or weeks later at an out-patient clinic.

Specially prepared schedules were used to expand and systematize the customary clinical records. For a small number of patients who discharged themselves precipitately we lack some items. Every patient was followed by home visiting for one year after admission.

The patients in the ward made up more than 90% of all adult cases of self-poisoning who arrived at any Edinburgh hospital. In a separate study (Kessel *et al.*, 1964) we sought the remainder and obtained essential details so that they might be included whenever we compiled rates for the city. Our rates therefore refer to all self-poisoned patients resident in the City of Edinburgh who were seen at any hospital, whether or not they were admitted. Our other information applies to the 151 men and 314 women who were admitted to the ward during the year, whether they came from within or outside the city. These 465 people made between them 522 admissions, for some repeated their acts.

Index of Endangering Life

Self-poisoning refers to the intentional taking of too much of a poisonous substance believing that it will be noxious. These are the three essential components of the act: that it must be deliberate, not accidental; that the quantity must be known to be excessive; and that it is realized that this may be harmful. Poisoned patients who did not satisfy these criteria were excluded.

It is hard to describe how "severe" a case of self-poisoning is, to assess the degree of the danger to life to which the patient, from his standpoint, exposed himself. The quantity of poison ingested is certainly relevant, though patients often have wildly wrong notions about the toxic effects of what they have done. Of equal importance is the extent to which the action is concealed or disclosed. To take tablets knowing that this will remain undiscovered for many hours is a very different matter from promptly entering the living-room and brandishing the offending bottle before the assembled family's startled gaze. These two factors were combined to produce an "index of endangering life." The untreated consequence of the amount of substance ingested forms one axis; the other comprises the steps taken by the patient to avoid or, alternatively, to ensure discovery. From this we have derived four categories of *predictable outcome* of the act: death, death probable, death unlikely, and certain to survive. Where a quantity of drug has been taken which would have been fatal were no treatment administered, and if the patient took steps to avoid discovery or else took no particular action in this respect, then the predictable outcome is "death." In the same circumstances a probably fatal dose puts the outcome into the "death probable" category. A smaller dose but one which still carries some risk scores in the "death unlikely" class, and so does a fatal dose if the patient has taken steps that he thought would ensure that he was soon discovered. In all other circumstances where he took such steps, or where the quantity of poison taken could not possibly have killed, the outcome is "certain to survive."

This index is not perfect; we do not always know how much a patient has taken of which substance; nor is it possible to decide precisely what amounts of barbiturate or of aspirin would be fatal, or to gauge the effects of overdoses of uncommon drugs. We have had to say that every case of coal-gas poisoning would have proved fatal if not discovered, although patients often have a shrewd idea that there is little money in the meter. In spite of these difficulties the index is usually easy to apply. Such a categorization of cases is necessary in order to appreciate the sort of acts we have been studying, and to be able to compare the work of different centres.

The predictable outcome for a fifth of our patients was death. For 35% some risk was involved. Almost half the patients did not jeopardize their lives (Table I). But this, as we shall see, does not justify regarding such cases as trivial and not serious.

TABLE I.—*Index of Endangering Life*

Predictable Outcome of Act	Males (170)	Females (352)
Death	19%	19%
Death probable	11%	11%
Death unlikely	28%	21%
Certain to survive	40%	49%
Unclassified	2%	0

Social and Demographic Findings

The City of Edinburgh is divided into 23 wards, and the annual self-poisoning rate was calculated for each of them. Individuals, not episodes, supplied the numerator values. The wards were ranked in order and divided into four groups—the six with the highest rates, the next six, the next five, and the six with the lowest rates (Fig. 1). The wards with the high rates lie in the old central areas, where the overcrowded tenements, the city's slums, are to be found. The only other section with high rates is Craigmillar, an apartment area developed in the late 1930s to rehouse those living in the worst of the central districts. Groups of families were moved there *en bloc*, and they took many of their problems with them.

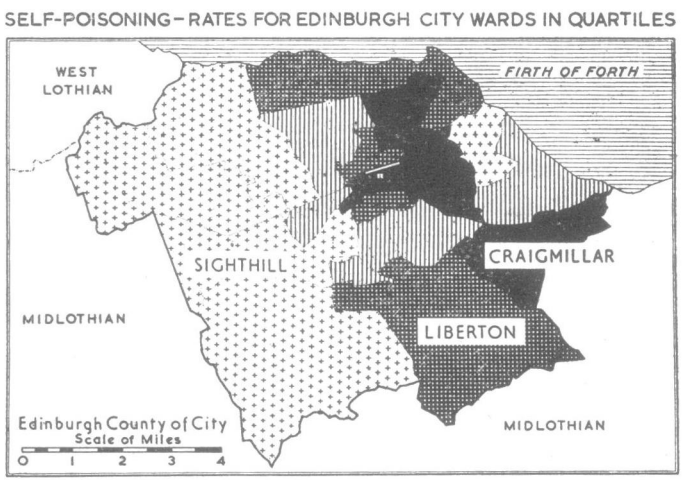

FIG. 1.—Self-poisoning rates for Edinburgh City wards in quartiles. The positions of Princes Street and the Castle are marked in white.

The next highest rates occurred principally in the factory suburbs, which grew up in the industrial revolution between Princes Street and the shores of the Forth. These are mean districts where employment is often precarious and life far from easy. In the same group, however, is one of the wards on the southern perimeter, Liberton, where post-war housing estates are now rapidly proliferating. Moderate rates characterized an inner band of suburbs, chiefly to the south, while the lowest rates were found in the solid, respectable, predominantly middle-class wards on the city's west side. This distribution is no artifact resulting from practitioners managing patients from better districts at home. The same pattern was observed when only patients admitted unconscious were considered, and few doctors fail to send in such patients. Well-planned housing estates need not produce high rates; one of these low-rate west wards is Sighthill, where a prosperous and secure working

population live in new housing areas close to, and developed in conjunction with, new industrial and office enterprises.

At the heart of the bad areas lies the ward of St. Giles, where the majority of the hostels and lodging-houses of the city are to be found. This ward has the highest rates of all, and the hostel and lodging-house populations contribute excessively. The self-poisoning rate for people living in such circumstances is twice that for those in better circumstances.

We correlated the self-poisoning ranking of the city wards with similar rankings for other characteristics reported in the census (Table II). The results amply confirm the relation between high self-poisoning rates and indices of social disorganization. Very significant associations were found with overcrowding, which is itself a sensitive measure of poor social circumstances; with the proportion of people living out of a normal family setting—that is, in hostels or lodging-houses; and with where criminals live. For the last-mentioned we obtained, from a reliable source, an estimate of which wards housed most felons and which least. But with indices of social isolation—with the proportion of single-person households and with the number of hotel rooms—there were no significant correlations. These are the factors which Sainsbury (1955) found to be associated with suicide, but self-poisoning is generated by different forces. The ecology of self-poisoning can be simply summed up: high rates are associated with living in overcrowded, poor surroundings, with living in bad social conditions.

TABLE II.—*Correlations of City Ward Rankings*

Self-poisoning with :	Kendall's Tau	P
Indices of social disorganization :		
Overcrowding (proportion > 1·5 per room) ..	0·526	0·00034
Family dislocation (proportion in lodging-houses, hostels, and institutions)	0·411	0·0032
Where criminals live	0·356	0·0048
Indices of social isolation :		
Living alone (proportion of single-person households)	0·249	Not significant
Living in hotels (proportion of people) ..	0·134	Not significant

Age

Age-specific rates differ between the sexes (Fig. 2). Male rates at ages 20 to 64 remain fairly constant at between 80 and 100 per 100,000 per annum. The teen-age rate is only half as great, and for those aged 65 and over the rate is very low indeed. For females aged 20 to 24 the rate is 280 per 100,000. With increasing years there is a progressive, regular, and steep fall until over the age of 45 there is no longer any difference between the sexes. The teen-age rate is very disquieting. In a single year more than one out of every 500 Edinburgh girls aged 15 to 19 poisoned herself.

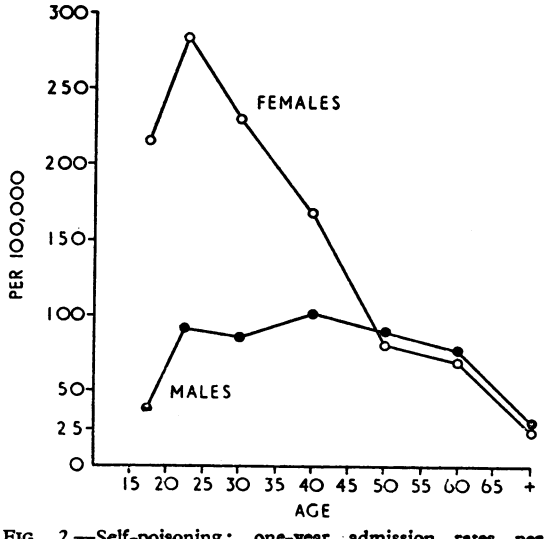

FIG. 2.—Self-poisoning: one-year admission rates per 100,000 by age and sex. Edinburgh adults only.

There is no simple explanation of the high rate of self-poisoning among young women in their early twenties. Is this perhaps the female counterpart of delinquency in young men? Such a hypothesis would suggest that women turn their aggression against themselves, while men act against society. Clinical study suggests a different formulation. These women, although fully engaged in their normal social setting, mothering and running a home, are emotionally isolated. Until recently they were experiencing an active social life; they have not yet had time to adjust to the confines of domesticity. Often they have no one with whom to share their feelings or to give expression to and explain their dissatisfactions. Unhappiness mounts, and then suddenly explodes, at a moment of special crisis.

Social Class

Because the 1961 census findings for Edinburgh are not available, only the percentage distribution of the classes among our patients can be examined. For males, though not for females, there is a seeming excess in the lower social classes. This suggests that the personal characteristics which lead to self-poisoning may drag men down socially, whereas women, whose social class is determined by their husband's occupation, do not suffer this effect.

Marital Status

The distribution of marital status is noteworthy only for the high figure for divorced men—12%. Because of this, we analysed the current state of the marriage of the 91 men and 161 women aged 20 to 64 who had ever been married. A very high proportion of the marriages, 30% for male and 26% for female patients, had been unnaturally interrupted by separation or divorce. In a sixth of these cases the break had been recent, within a month, and it probably played a part in causing the self-poisoning act. But generally the separation was of long duration. Nearly half the broken marriages had ended five or more years before the act took place.

For the marriages that subsist the going is not good either (Table III). Whichever was the patient, husband and wife always concurred in telling us about their marital relations and nearly always they agreed that they were bad. Frequent hostility, admitted by both spouses, characterized 85% of the marriages of male and 68% of female patients. Frequent

TABLE III.—*Marital Relations (Percentages of Married Patients)*

	Males	Females
Frequent hostility disclosed	85%	68%
Clinical assessment { Poor	14% } 57%	14% } 43%
Clinical assessment { Bad	43% }	29% }
Desire to end marriage { By patient only ..	8%	11%
Desire to end marriage { By spouse only ..	17%	8%
Desire to end marriage { By both	2%	4%

hostility does not invariably mean that a marriage is unsound. The psychiatric social worker, who had seen both partners, graded only half the marriages as poor or bad, more of male patients than of female. Perhaps, however, one has to be inside a marriage really to assess its satisfactions and its failures. Despite the hostility not many patients or their spouses desired that their marriages should terminate. More often it was the wife that did so, whoever was the patient. We found, when we followed our cases subsequently, that where either partner had expressed such a wish there was rarely any reconciliation later.

It may be the patient or the spouse who is responsible for these unfortunate marriages. It may be both. Certain the

other partner is not blameless. Unfaithfulness, and, for the husbands of our women patients, jealousy, gambling, and, above all, excessive drinking were often encountered. We accepted the attribute only if the spouses of our patients themselves revealed it. Only a half of them struck the psychiatric social worker who interviewed them as normal. The others mostly exhibited character disorders, though a proportion of the wives of male patients were psychiatrically ill.

Other personal relationships did not fare better: 70% of the men and 59% of the women who were single, or whose marriages had ceased, got on badly with whoever was the principal figure in their life situation.

This bad relationship with the key individual—spouse, other relative, or friend—was the dominant theme in the story of nearly every patient, whether narrated by himself or by an informant. More than any other factor it provided the setting for the self-poisoning act. Yet in many cases it but set the seal on a life-pattern characterized by adverse circumstances—a bad work record, chronic debt, and constant changes of home, often the product of separations.

Moreover, the life-story seemed to repeat a similar story in the parents. There had been a great amount of parental absence during the patient's childhood (Table IV). By the age of 5 there had been abnormal absences due to death, hospitalization,

TABLE IV.—*Mother or Father Absent During Childhood (For at Least Six Months, Due to Death, Hospitalization, or Separation Arising from Marital Disharmony). Based on Data for 441 Patients*

	Patient's Age when Separation Began		
	Under 5	Under 10	Under 15
Mother absent	13%	21%	28%
Father absent	25%	36%	43%
Both parents absent	10%	17%	21%

or separation arising from marital disharmony, but excluding those due to war service or employment, of 13% of the mothers and 25% of the fathers. Most of these were due to the parents separating because their marriage had broken down. We took a minimum period of six months as the criterion of absence, but in practice a much longer time than this was usually involved. The greater amount of paternal than maternal absence is because when a marriage breaks the child tends to stay with his mother. But for 10% there had been separation from both parents. By the age of 15 half the patients had lacked one or other parent, and a fifth had lacked both. These are very high figures indeed. Whether the broken parental home is the root from which stems the disorganized life-pattern, the disorganized marriage, the dwelling in disorganized districts, must remain a matter for speculation, but all these four circumstances are often found in the stories of people who poison themselves.

This is the background upon which precipitating social factors are superimposed. Table V shows the frequency with which certain items occurred and were important in the stories we obtained. Excessive drinking is prominent. Unemployment plays its part with men. Money worries were often mentioned, housing problems less commonly. Girls in particular were

TABLE V.—*Major Precipitating Factors. Percentages of Approximately 165 Males and 350 Females (Except for Marital Disharmony and Forced Separation, which are Based on 68 Married Males and 147 Married Females)*

	Males	Females
Marital disharmony	68%	60%
Drinking a problem	51%	16%
Financial difficulties	44%	31%
Unemployment	34%	18%
Kin disharmony	28%	30%
Isolation	15%	
Crime	15%	
Housing difficulties	14%	19%
Difficulties at work	14%	
Love affairs going badly		16%
Forced separation	12%	

More than one factor might be present. Factors occurring in less than 10% of cases have been omitted. They included bereavement, gambling,nd sexual problems.

sometimes driven to the extremity of poisoning themselves by a broken or a breaking love affair.

Means Adopted

Just over a half of the acts involved barbiturates (Table VI). Almost always they had been obtained legally on prescription, though these were not always written for the patients themselves ; not uncommonly the tablets were intended for someone else. Nor was the illness for which they had been prescribed always current ; often they had remained in the house for some time. One patient in eight took aspirin or a related compound. The second largest group, accounting for nearly a quarter of all admissions, were " other drugs." These were generally the newer medicines, sedatives, stimulants, tranquillizers, and antidepressants designed to treat symptomatically some abnormality of mental state. Only one in a hundred employed a substance which was not meant to be taken at all, and 9% used coal-gas. The distribution of methods was the same for men and for women.

TABLE VI.—*Method of Self-poisoning in 522 Cases*

Barbiturate	284 (55%)
Aspirin	64 (12%)
Other drug	119 (23%)
Non-drug poison	6 (1%)
Coal-gas	49 (9%)

This pattern has only recently been established. The ward admission books from 1928 onwards have yielded an interesting picture of how fashions have altered since that time (Fig. 3). Thirty-five years ago non-drug poisons—chiefly lysol and other corrosive agents—were responsible for the majority of admissions, and, together with coal-gas, accounted for nearly all the cases. Over the years non-drug poisons have been almost entirely given up, and the few cases that do still occur generally involve a fairly mild substance.

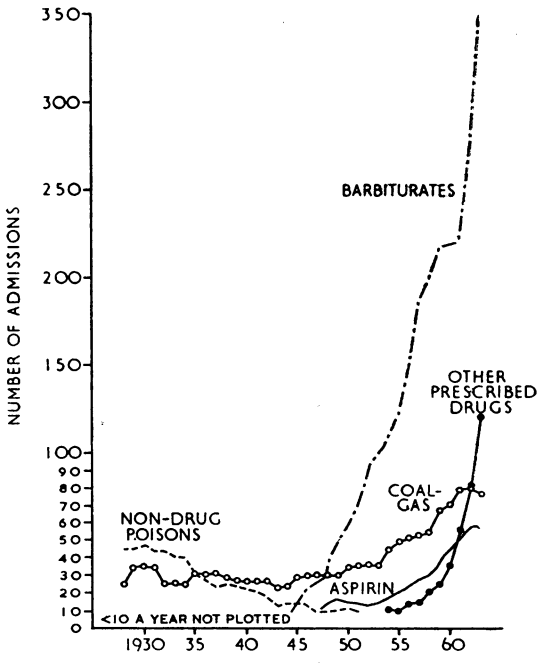

FIG. 3.—Yearly admissions of poisoned patients 1928–63, showing method used.

Coal-gas poisoning remained at about the same level until the mid-1950s, since when it has slowly risen. This may well be due to a changing admission policy ; nowadays every case is admitted whether or not the physical condition of the patient necessitates it.

It is not likely, however, that we can ascribe the rise in salicylate poisoning to administrative adjustments, because

similar findings have been reported nationally. Cases began to occur to any important extent shortly after the war, and the numbers are still rising.

The first patient suffering from barbiturate poisoning was admitted to the ward in 1932. About half a dozen cases a year came in regularly until the end of the war. Then began a spectacular increase. Barbiturate poisoning is an outstanding problem. Sleeping tablets, and they are mostly barbiturates, are the accepted mid-twentieth-century passport to oblivion, and doctors seem only too ready to issue the necessary visa.

Yet perhaps the most important rise to comment on is that of the "other drug" poisons, chiefly psychotropic preparations. Chlorpromazine was introduced into psychiatry in the early 1950s. A growing panoply of drugs has come into use since then, and increasingly we are having to deal with the results of their deliberate misuse. Those who are currently under treatment by a psychiatrist adopt this method more than do others, 35% as against 23%. Their growing employment seems to be as well as, not instead of, other means. In the matter of method the physician leads, the layman follows. On the whole such drugs are not as dangerous as barbiturates. Yet because the life-span of each may be short, even their principal constituents enjoying a relatively brief vogue, it is hard to develop the routine of correct toxicological management that is so important for successful resuscitation. The mounting use of these drugs for self-poisoning requires to be carefully watched.

People of different ages employ different methods (Fig. 4). The percentage using barbiturates and the percentage using coal-gas both rise with age. On the other hand, the proportion using salicylates falls. "Other drugs" show little variation with age except that they are not much employed by patients aged 55 and over. This is strange, since one would think that these drugs would have been optimally prescribed for the symptomatic management of elderly patients.

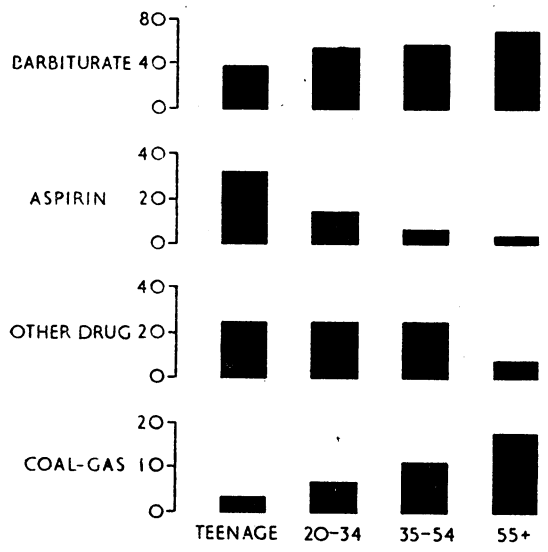

FIG. 4.—Method of self-poisoning used at different ages. Percentages of all in each age group.

The other age trends are easy to explain. Insomnia is increasingly complained of as age advances, hence the extra prescribing of barbiturates. Young people presumably take salicylates because it is less easy for them to get sleeping pills. Elderly people use coal-gas because they are often alone in the home for long enough to adopt this measure, and they do not have, as younger women have, children in the house whose lives would be endangered. Cultural factors may also be important; when they were younger it was one of the traditional methods of self-poisoning and they have carried this accepted pattern with them into old age. The young people of to-day probably will not employ gassing when they get old.

A word of warning is apposite here. Some instances when an elderly person is overcome by carbon monoxide are accidents, and sympathetic physicians, to spare patients or their relatives unnecessary distress, often feel disposed to fall in with this explanation when it is proffered. Such stories should not be accepted without thorough inquiries. In our experience coal-gas poisoning does not often turn out to be accidental. It is no kindness to a patient to discharge him home with his depression undisclosed and untreated and the circumstances all too ripe for a repeat performance.

In most cases the patient did not use all the tablets that were available. Even when they were taken impulsively there was generally some calculation, which the patient would express like this: "I don't know exactly how many I took. I took what I thought was enough." Enough, but enough for what? The answer, as we shall see, is far from simple.

Diagnosis

The appropriate terms of conventional psychiatric nomenclature—depression, neurosis, personality abnormality, and the like—are ill-suited to describing, differentiating, or even pigeonholing the patients. We have been forced into unreal decisions whether a patient's manifest unhappiness should be attributed to a depressive illness or regarded as understandable distress at intolerable living circumstances. We have had to distinguish, with what success I cannot judge, between normality and personality disorder. Very few of the patients were schizophrenic or organically ill (Table VII). Depressive illness, the commonest condition, was hardly ever accompanied by psychotic phenomena and was preponderantly mild. Women were more often diagnosed as depressive, whereas men suffered more from personality abnormality.

TABLE VII.—*Diagnosis*

	Males (165)	Females (350
Organic psychiatric illness	5%	4%
Depression	26%	43%
Other psychosis	5%	5%
Other neuroses	5%	12%
Personality disorder only	32%	16%
No psychiatric illness	26%	20%

7 patients left before any diagnosis could be made.

Of particular importance is the fact that 26% of the men and 20% of the women had no psychiatric illness. It has often been argued that to poison oneself is such an abnormal act that everyone who does so must be psychiatrically ill. We have not fallen into that tautological trap, for to contend thus is to make the recognition of psychiatric illness no more than a dependent phenomenon. Instead, we reasoned as follows: the diagnosis of a psychiatric condition must be made from positive features. These are detected either from the history or on clinical examination. If all the information about the patient's mental state at the time of his act, obtained both from him and from an informant, does not indicate any departure from normal, and if clinical examination after physical recovery fails to reveal any significant disorder, then there are no grounds for concluding that the patient is psychiatrically ill. This view will not be acceptable to everyone. There are psychiatrists who assign the sobriquet of abnormality of personality very readily. But even if they would have labelled as suffering from a character disorder some of those whom we have judged to be normal, that disorder was certainly not pronounced. It was not enough by itself to explain their self-poisoning acts. Nor is this unexpected. Distress drives people to self-poisoning acts, and distress is not the exclusive province of the mentally ill.

The significance of the finding that so many patients had no psychiatric disorder is that it focuses attention upon the purposes of the act and makes us concentrate upon personal relationships in their social setting. It is a finding that we were able to make because we have dealt with the total number of

cases of self-poisoning coming to hospital and not just with those cases somehow selected for psychiatric investigation.

Those with no psychiatric illness tended to be younger ; those with organic illnesses were generally old. Apart from this the relation between diagnosis and age was not close.

The principal diagnosis was related to the index of endangering life (Table VIII). The acts of patients with a formal psychiatric illness (excluding character disorder) were more life-endangering than those of patients with personality abnormality or those of patients without a psychiatric illness. Yet the majority of acts of even the more seriously ill people were clearly pointed towards survival.

TABLE VIII.—*Diagnosis and Index of Endangering Life*

Predictable Outcome	All Psychiatric Illnesses (292)	Personality Disorder Only (108)	No Psychiatric Diagnosis (113)
Death	25%	12%	12%
Death probable	11%	11%	10%
Death unlikely	20%	26%	30%
Certain to survive	43%	51%	49%

χ^2 * = 18·99. 3 degrees of freedom. $P < 0.001$.
* Calculated by comparing all psychiatric illness against the two other categories combined.

The different diagnostic groups do not vary much in the methods they choose. The only features of note are that those without a psychiatric illness use aspirin rather more often than the others, and that people with an organic illness use coal-gas more. These findings are probably attributable to the ages of those involved.

Quite commonly patients who were suffering from depression had an underlying character disorder. The combination of depression and psychopathy often occurred. This conjunction seems especially prone to manifest in self-poisoning acts. Personality disorder, either as a principal or as an accessory diagnosis, was recognized in 41% of men and 27% of women patients, and about half of these were classed as psychopaths. A smaller proportion appeared to us to be abnormally immature in their outlook. No other sort of personality abnormality occurred frequently.

Associated diagnostic factors included alcoholism, drug addiction, epilepsy, and subnormality. Fifty-two per cent. of men had one or more of these conditions, and the dominant factor was alcoholism. Thirty-nine per cent. of the men and 8% of the women were alcoholics, seasoned drinkers, unquestionably addicted, many of them bearing the physical signs of chronic alcoholism. Alcoholism is a major factor predisposing to self-poisoning. So is alcohol itself: 56% of the men and 23% of the women had been drinking just before the act took place—a deliberate act in every case. The methods adopted by alcoholics did not differ from those employed by the generality of patients, and the acts which led to their admission, and to the admission of those inebriated at the time, were neither more nor less serious than those of other people. But of the six patients, four men and two women, who killed themselves within a year of discharge, five were alcoholics.

Recommended Disposal

Twenty-six per cent. of the patients were sent for further in-patient psychiatric treatment, 38% were recommended out-patient treatment, which, unless they had previously been under the care of another Edinburgh psychiatrist, was carried out by our own service. For 36% no further psychiatric treatment was arranged (Table IX): sometimes because the patient refused our suggestion, but in most cases because we did not think that further treatment was called for. This was either because there was no condition present to treat, and the tangled precipitating social web had been unravelled while the patient was still in our care, or because the personality disorder from which the patient suffered was so ingrained that treatment would not avail. Diagnosis is correlated with disposal, but this was not primarily decided on the basis of the diagnosis made. The proportion recommended for in-patient care must inevitably depend upon availability of psychiatric beds. Similarly the extent of out-patient care depends upon the amount of psychiatric time allotted for this.

TABLE IX.—*Diagnosis and Disposal*

	Patients with a Psychiatric Illness (286)	Patients with Personality Disorder Only (103)	Patients with no Psychiatric Diagnosis (112)	All Patients* (501)
Further psychiatric treatment: In-patient	37%	17%	8%	26%
Further psychiatric treatment: In-patient + Out-patient	77%	51%	45%	64%
Further psychiatric treatment: Out-patient	40%	34%	37%	38%
No further psychiatric treatment	23%	49%	55%	36%

* Excluding 21 patients who discharged themselves before disposal was arranged.

It does not follow that the patient can benefit from treatment only if he has a psychiatric illness. Nearly half of those without such illness were judged to be helpable by further care, a term which embraces social work as well as psychiatric therapy. Generally this was on an out-patient basis, but 8% of them required to be in-patients so that they might properly be tided over the acute crisis situation which had caused their act.

[*Part II will appear in our next issue.*]

Pulmonary Function in Acute Myocardial Infarction

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In studying the disturbance of arterial blood gases in patients with acute myocardial infarction it soon became apparent that many had evidence of pulmonary congestion (McNicol *et al.*, 1964). This paper reports the changes in arterial blood gases found in a large number of patients with acute myocardial infarction and the results of several procedures carried out with a view to assessing the effect of pulmonary congestion on the function of the lungs.

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Material

Observations were made in the years 1962–4 on patients admitted to Central Middlesex Hospital with acute myocardial infarction and pulmonary congestion from other causes ; those